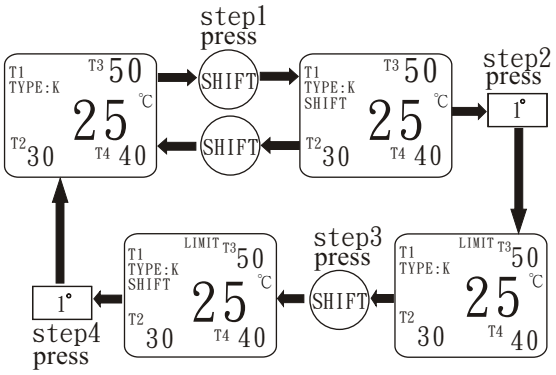
TM-7XX Series Thermometer

K/J/T/E/R/S/N Types

Users manual

Operation

13.**LIMIT**:To enforce alarm function key.



P.S1:When the main display temp.value is higher than the alarm setting Hi temp.value or lower than the alarm Lo setting temp.value, the alarm will continue send out.

2:The Hi/Lo setting temp.value of the thermocouple types are different.

Type \ Hi/Lo	Hi	Lo
K	1300	-99.9
J	1000	-99.9
T	400	-99.9
E	800	-50
R	1700	0
S	1700	0
N	1300	-99.9

Names Of Parts

1.LCD display

2.Function control key

3.Thermocouple input jack

4.Battery cover

5.RS-232 input jack

6.Shift button

7.Power button

■ Battery replacement

1.The symbol "B" that appears in the upper left of the LCD display indicates that the unit's battery is running low. Please replace the 1.5V battery at once to ensure the test accuracy.
2.Remove the battery cover by one screwdriver.
3.Replace the old battery with four new 1.5V batteries and lock the battery cover.
4.Prior to replacing the battery, please make certain to remove the thermocouple from the temperature gauge as a safety precaution.
5.When in extended idle, please remove the 1.5V battery from the temperature gauge and store the temperature gauge only in a cool and low-humidity setting.
6.To avoid combustion, DO NOT dispose of batteries in general into an open flame.
7.Caution the positive and negative polarity when loading battery.
8.Please abide by pertinent laws and regulations when disposing of used batteries.

■ Introduction

Thank you for purchasing the temperature gauge from us. Please take a few minutes to browse through this user manual before you begin to operate the unit to ensure that you are fully familiarized with how best to operate the temperature as accurately and safely as possible.
The TM-7xx serial temperature gauges features a microprocessor-ratsd digital temperature gauge, which according to varied input configurations and different thermocouple types, is divided into 48 modes, refer to the table below for a concise summary of subtle distinctions in their designed functions.

TM-7□□□ Series

1.Single Channel 1.K Type
2.Dule Channel 2.K/J Types
3.Triple Channel 4.K/J/E/T Types
4.Four Channel 7.K/J/E/T/R/S/N Types

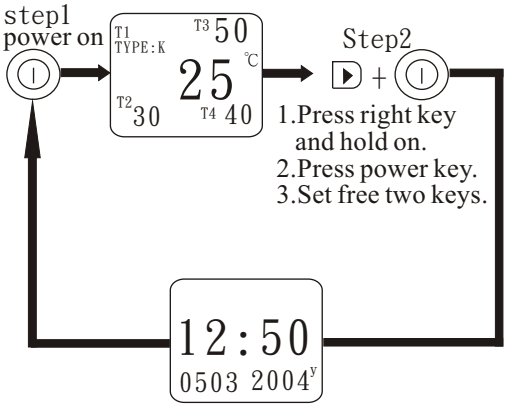
□.Basic equipment(No Back Light)
R.RS-232 Interface(Include Back Light)
D.RS-232+Data Logger(Include Back Light)

Features

1.The maximum displays for four temp. values.
2. Resolution 0.1℃/0.1℉,1℃/1℉.
3.Swift response.
4.Setting alert temp. range.
5.With auto power off function.
6.With low battery indicator function.
7.With a perpetual calendar function.
8.With "COUNT"function.
9.With T1~T4 exchange to main display function.
(for above dual channel modes)
10.With T1-T2 function.(for dual channel modes),
T3-T4 function(for four channel).
11.Additional features include: HOLD,℃/℉/K,
REL,CHAN,MAX/MIN/AVG,1°,TYPE,TIME
(CLOCK setting), LIMIT(Hi/Lo setting).
12.CE certified, according to ITS-90 law.

Operation

16.**perpetual calendar**:

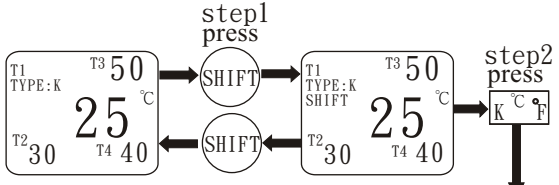


17. ☼ :backlight.(for option)

A.Press the backlight button to turn the backlight ON or OFF.
B.In no turn off backlight condition, the backlight function can keep on 1 minute.

■ Operation

15.**CLOCK**:To enforce date setting function key.



A.Use ◄,► key to move place.
B.Use ▼,▲ key to set hour & minute.
C.The flicker word is the adjustable word.

step3 press SHIFT

A.Use ◄,► key to move place.
B.Use ▼,▲ key to set date & month.
C.The flicker word is the adjustable word.

step4 press SHIFT

A.Use ◄,► key to move place.
B.Use ▼,▲ key to set year.
C.The flicker word is the adjustable word.

step5 press SHIFT

Back to main display.

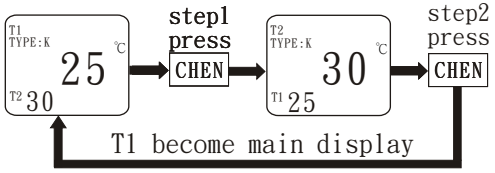
■ General Specifications

1.Display Mode: Four-digit liquid crystal display.
2.Polarity indicator: No indicator is shown when readouts are in the positive value, while the symbol"-" is prompted when readouts fall into the negative value.
3.Overload indicator: The "OL"or"-OL"indicator.
4.Low-battery indicator: The symbol"B"is prompted on the LCD when the battery runs low.
5.Power source: Four DC-1.5V/UM-4 batteries.
6.Auto power off: The unit no operations are over 20-minute,the battery power will be turned off. Press the "Shift" key for 3 seconds, the auto power off will be cancelled.
7.Sample rate:1time/sec.
8.Battery life: Approx. 550 hours.
9.Operating Temperature and Humidity: 0℃~50℃(32℉~122℉),0~80%RH.
10.Storage Temperature and Humidity: -20℃~60℃(-4℉~140℉),0~80%RH.
11.Dimension:164x76x32mm(LxWxH).
12.Weight: Approx. 415g(include batteries).
13.Accessories:
(A) DC-1.5V/UM-4(4pcs).
(B) Housing(1pcs).
(C) K-type thermocouple wire.
(single channel x1pcs,
for above dual channel x2pcs).
(D) Users manual(1pcs).

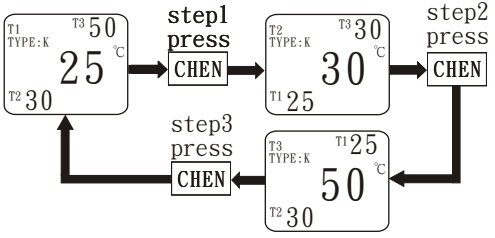
■ Operation

7.**CHEN**:every input temp. value changed to main display function key.(for above dual channel modes)

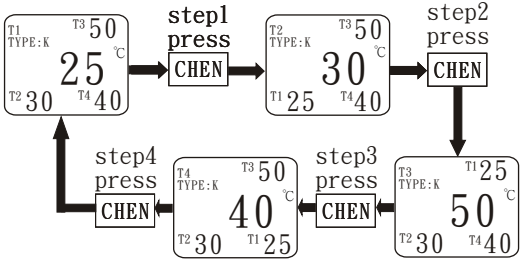
A.dual channel



B.triple channel

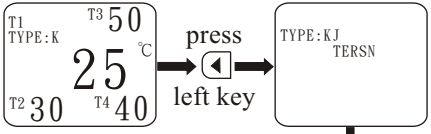


C.four channel



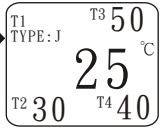
■ Operation

8.**TYPE**:select thermocouple type function key. TM-7XX series according to different modes, there are seven types in all. Other modes can selected by users besides TM-711,TM-721,TM-731,TM-741. The method of operation as follows:



A.Use ◀, ▶ key to choose"type".
B.The word will flicker for the chosen"type".
C.To confirm it,then press "SHIFT"key.

The type became to "J" type.



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■ Caution

1.Input protection: The temperature jack carried a maximum voltage of 24 volts DC or AC .
2.Temperature jacks: Design for the insertion of a standard small thermocouple jacks, which has a center spacing of 7.9mm between the two prongs.
3.Please DO NOT placed inside a microwave for temperature testing.
4.A correct thermocouple slot should be chosen when operating the temperature gauge.
5.Please DO NOT attempt to use a temperature gauge that is not working properly, for this may result in physical harms, send for repair service at once.
6.Please DO NOT attempt to operate the temperature gauge in the around sites where explosive gases, vapor or dust particles are present.
7.Please refrain from subject the paired thermocouple or the grounding between the thermocouples to a voltage exceeding what has been marked on the unit.
8.When gauge occur crashed , please take one battery out for above one minute. Then place the battery back and restart the gauge.

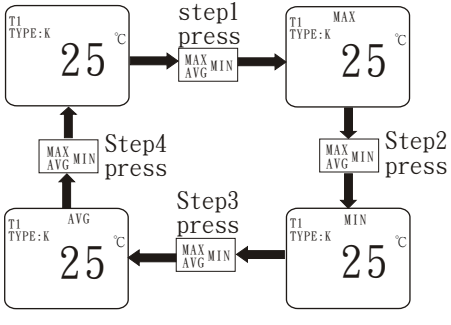
■ Operation

1.⏻:Power ON/OFF key.
Press the power button to turn the power ON or OFF.

2.**℃/℉/K**: The temp. Unit selection key.
Press the key to sequentially alternate the three temp. unit of℃,℉and K.

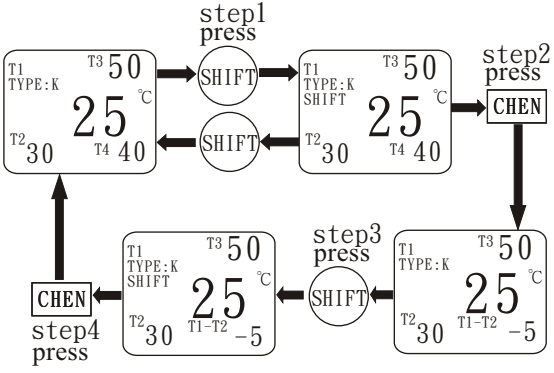
3.**HOLD**:The readout hold function key.
Press the "HOLD"key, a "HOLD" icon will display on the LCD and the readout held in; press the "HOLD" key once more to cancel the "HOLD" function.

4.**MAX/MIN/AVG**:The maximum/minimum/ average readout function key

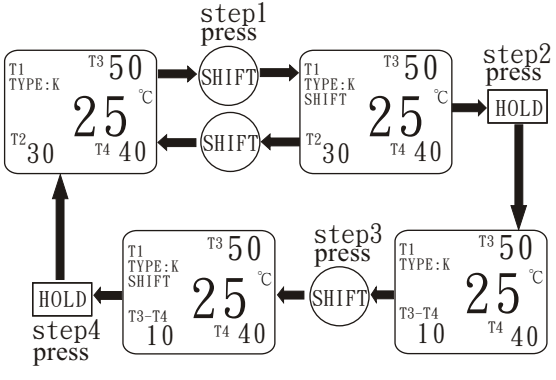


■ Operation

11.**T1-T2**: for above dual channel modes.

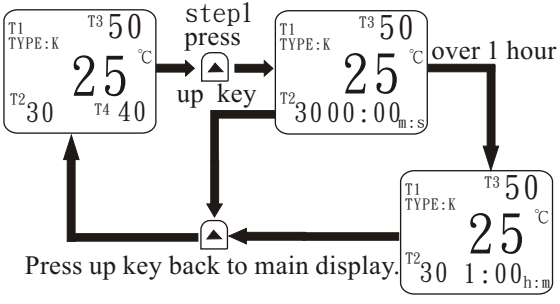

step1 press
T1 TYPE:K T3 50 25 ℃ T2 30 T4 40
SHIFT
T1 TYPE:K SHIFT T3 50 25 ℃ T2 30 T4 40
step2 press
CHEN
T1 TYPE:K T3 50 25 ℃ T2 30 T1-T2 -5
step3 press
T1 TYPE:K SHIFT T3 50 25 ℃ T2 30 T1-T2 -5
CHEN
step4 press

12.**T3-T4**: for four channel modes.

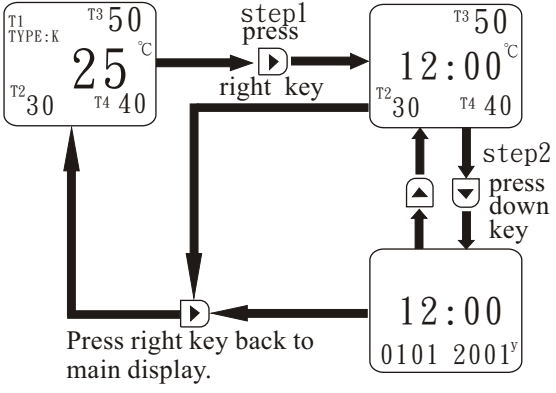

step1 press
T1 TYPE:K T3 50 25 ℃ T2 30 T4 40
SHIFT
T1 TYPE:K SHIFT T3 50 25 ℃ T2 30 T4 40
step2 press
HOLD
T1 TYPE:K T3 50 25 ℃ T3-T4 10 T4 40
step3 press
T1 TYPE:K SHIFT T3 50 25 ℃ T3-T4 10 T4 40
HOLD
step4 press

■ Operation

9.**COUNT**: The count time setting function key.
The max count time is 99 hours and 59 minutes.

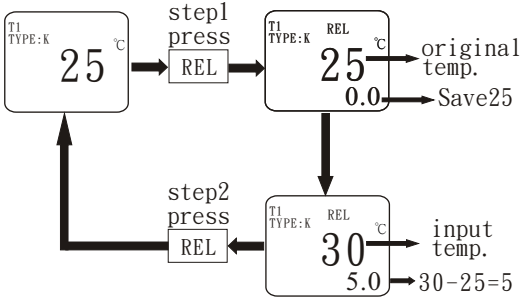


10.**TIME**:To see the present time function key.



■ Operation

5.**REL**:The minus relative readout function key.
Press the "REL" key, a "REL" icon will display on the LCD and the original of a temp. will become to 0, and save the original temp. to make a standard value. Whenever the input temp. shifts, the LCD will shows the minus value of original temp. value and input temp. Value.



6.**I°**:1°or 0.1°unit selection function key.
Press the "I°"key, the whole resolution will become 1℃/ 1℉ ,and no dot. Press the key once more, the display will restore common state(the resolution will become 0.1℃/ 0.1℉).

P.S:The resolution of the thermocouple types is shown in page 4.

■ Electrical Specifications

1.Temp.unit: Celsius temp.(℃). Fahrenheit temp.(℉).Absolute temp.(K).

2.Measurement Range:(At 23± 5℃,< 80%RH)

K-type:-100℃~1300℃(-148℉~2372℉)

J-type:-100℃~1000℃(-148℉~1832℉)

T-type:-100℃~400℃(-148℉~752℉)

E-type:-50℃~800℃(-58℉~1472℉)

R&S-type:0℃~1700℃(32℉~ 3092℉)

N-type:-100℃~1300℃(-148℉~2372℉)

3. Accuracy: The basic accuracy does not include the error of the thermocouple.

K/J/T/E/-type:

±(0.1% reading+0.7℃)-100℃~-1300℃

±(0.1% reading+1.4℉)-148℉~2372℉

R/S-type:

±(0.1% reading+2℃) 0℃~1700℃

±(0.1% reading+4℉) 32℉~3092℉

N-type:

±(0.1% reading+1.5℃)-100℃~1300℃

±(0.1% reading+3℉)-148℉~2372℉

4.Resolution:

	1℃	0.1℃
K	-100℃~1300℃	-100℃~200℃
J	-100℃~1000℃	-100℃~150℃
T	-100℃~400℃	-100℃~150℃
E	-50℃~800℃	-50℃~100℃
R	0℃~1700℃	
S	0℃~1700℃	
N	-100℃~1300℃	-100℃~150℃

■ Operation

14.**Hi/Lo**:The alarm Hi/Lo temp.value setting.